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Titles of Most Frequently Occurring Classifications of Patents Returned
From A Search of 10721057 on March 14, 2005

7 361/234 (4 OR, 3 XR)
Class 361 : ELECTRICITY: ELECTRICAL SYSTEMS AND DEVICES
361/230 ELECTRIC CHARGE GENERATING OR CONDUCTING MEANS
(E.G., CHARGING OF GASES)
361/233 .Use of forces of electric charge or field
361/234 ..Pinning

6 257/E21.508 (0 OR, 6 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
DEVICES OR OF
PARTS THEREOF (EPO)
257/E21.002 .Manufacture or treatment of semiconductor
device (EPO)
257/E21.04 ..Device having at least one potential-jump
barrier or surface barrier, e.g., PN junction,
depletion
layer, carrier concentration layer (EPO)
257/E21.499 ...Assembling semiconductor devices, e.g.,
packaging , including mounting, encapsulating, or
treatment
of packaged semiconductor (EPO)
257/E21.506Attaching or detaching leads or other
conductive members, to be used for carrying current to
or
from device in operation (EPO)
257/E21.507Formation of contacts to semiconductor by
use of metal layers separated by insulating layers,
e.g.,
self-aligned contacts to source/drain or emitter/base
(EPO)
257/E21.508Forming solder bumps (EPO)

6 430/313 (2 OR, 4 XR)
Class 430 : RADIATION IMAGERY CHEMISTRY: PROCESS,
COMPOSITION, OR PRODUCT THEREOF
430/269 IMAGING AFFECTING PHYSICAL PROPERTY OF
RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR OR
PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
430/311 .Making electrical device
430/313 ..With formation of resist image, and etching
of substrate or material deposition

5 216/22 (4 OR, 1 XR)
Class 216 : ETCHING A SUBSTRATE: PROCESSES
216/22 FORMING OR TREATING ARTICLE CONTAINING
MAGNETICALLY RESPONSIVE MATERIAL

5 257/E21.304 (0 OR, 5 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
DEVICES OR OF
PARTS THEREOF (EPO)
257/E21.002 .Manufacture or treatment of semiconductor
device (EPO)

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257/E21.04 ..Device having at least one potential-jump
depletion barrier or surface barrier, e.g., PN junction,
layer, carrier concentration layer (EPO)

257/E21.085 ...Device having semiconductor body comprising
without Group IV elements or Group III-V compounds with or
impurities, e.g., doping materials (EPO)

257/E21.211Treatment of semiconductor body using
material on process other than deposition of semiconductor
a substrate, diffusion or alloying of impurity

material, or radiation treatment (EPO)

257/E21.214To change their surface-physical
cutting characteristics or shape, e.g., etching, polishing,
(EPO)

257/E21.294Deposition/post-treatment of
layers on noninsulating, e.g., conductive - or resistive -
insulating layers (EPO)

257/E21.3Post treatment (EPO)

257/E21.303Planarization (EPO)

257/E21.304By chemical mechanical polishing (CMP)
(EPO)

5 257/E21.311 (0 OR; 5 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
DEVICES OR OF PARTS THEREOF (EPO)

257/E21.002 .Manufacture or treatment of semiconductor
device (EPO)

257/E21.04 ..Device having at least one potential-jump
depletion barrier or surface barrier, e.g., PN junction,
layer, carrier concentration layer (EPO)

257/E21.085 ...Device having semiconductor body comprising
or without Group IV elements or Group III-V compounds with
impurities, e.g., doping materials (EPO)

257/E21.211Treatment of semiconductor body using
material on process other than deposition of semiconductor
a substrate, diffusion or alloying of impurity

material, or radiation treatment (EPO)

257/E21.214To change their surface-physical
cutting characteristics or shape, e.g., etching, polishing,
(EPO)

257/E21.294Deposition/post-treatment of
layers on noninsulating, e.g., conductive - or resistive -
insulating layers (EPO)

257/E21.3Post treatment (EPO)

257/E21.305Physical or chemical etching of layer,
e.g., to produce a patterned layer from pre-deposited
extensive layer (EPO)

257/E21.308By chemical means only (EPO)

257/E21.31By vapor etching only (EPO)

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257/E21.311Using plasma (EPO)

5 257/E21.705 (0 OR, 5 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
Could not find subclass title.

5 257/E25.013 (0 OR, 5 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E25.001 ASSEMBLIES CONSISTING OF PLURALITY OF
INDIVIDUAL SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES
(EPO)

257/E25.002 .All devices being of same type, e.g.,
assemblies of rectifier diodes (EPO)

257/E25.003 ..Devices not having separate containers (EPO)

257/E25.01 ...Device consisting of plurality of
semiconductor or other solid state devices or components
formed in or on common substrate, e.g., integrated
circuit
device (EPO)

257/E25.013Stacked arrangements of devices (EPO)

5 279/128 (0 OR, 5 XR)
Class 279 : CHUCKS OR SOCKETS
279/128 WITH MAGNETIC OR ELECTROSTATIC MEANS

5 451/41 (3 OR, 2 XR)
Class 451 : ABRADING
451/28 ABRADING PROCESS
451/41 .Glass or stone abrading

4 216/41 (0 OR, 4 XR)
Class 216 : ETCHING A SUBSTRATE: PROCESSES
216/41 MASKING OF A SUBSTRATE USING MATERIAL RESISTANT
TO AN ETCHANT (I.E., ETCH RESIST)

4 257/E21.583 (0 OR, 4 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.531 ...For electrical parameters, e.g.,
resistance, deep-levels, CV, diffusions by
electrical means
(EPO)

257/E21.532 .Manufacture or treatment of devices
consisting of plurality of solid-state components
formed in
or on common substrate or of parts thereof;
manufacture of
integrated circuit devices or of parts thereof (EPO)

257/E21.536 ..Manufacture of specific parts of devices
(EPO)

257/E21.575 ...Interconnections, comprising conductors and
dielectrics, for carrying current between separate
components within device (EPO)

257/E21.576Characterized by formation and post
treatment of dielectrics, e.g., planarizing (EPO)

257/E21.583Planarization; smoothing (EPO)

4 360/126 (4 OR, 0 XR)
Class 360 : DYNAMIC MAGNETIC INFORMATION STORAGE OR
RETRIEVAL
360/324.1 ...Having one film pinned (e.g., spin valve)

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- 360/125 .Head core
360/126 ..Laminated
- 4 438/622 (3 OR, 1 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
CONDUCTIVE MATERIAL
438/597 .To form ohmic contact to semiconductive
material
438/618 ..Contacting multiple semiconductive regions
(i.e., interconnects)
438/622 ...Multiple metal levels, separated by
insulating layer (i.e., multiple level metallization)
- 4 438/624 (0 OR, 4 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
CONDUCTIVE MATERIAL
438/597 .To form ohmic contact to semiconductive
material
438/618 ..Contacting multiple semiconductive regions
(i.e., interconnects)
438/622 ...Multiple metal levels, separated by
insulating layer (i.e., multiple level metallization)
438/624Separating insulating layer is laminate or
composite of plural insulating materials
- 4 438/637 (1 OR, 3 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
CONDUCTIVE MATERIAL
438/597 .To form ohmic contact to semiconductive
material
438/618 ..Contacting multiple semiconductive regions
(i.e., interconnects)
438/622 ...Multiple metal levels, separated by
insulating layer (i.e., multiple level metallization)
438/637With formation of opening (i.e., viahole)
in insulative layer
- 4 438/669 (0 OR, 4 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
CONDUCTIVE MATERIAL
438/597 .To form ohmic contact to semiconductive
material
438/669 ..And patterning of conductive layer
- 4 438/687 (0 OR, 4 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
CONDUCTIVE MATERIAL
438/597 .To form ohmic contact to semiconductive
material
438/687 ..Copper or copper alloy conductor
- 4 438/691 (0 OR, 4 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

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- 438/689 CHEMICAL ETCHING
 438/690 .Combined with the removal of material by
 nonchemical means (e.g., ablating, abrading, etc.)
 438/691 ..Combined mechanical and chemical material
 removal
- 4 438/692 (2 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/689 CHEMICAL ETCHING
 438/690 .Combined with the removal of material by
 nonchemical means (e.g., ablating, abrading, etc.)
 438/691 ..Combined mechanical and chemical material
 removal
 438/692 ...Simultaneous (e.g., chemical-mechanical
 polishing, etc.)
- 4 438/712 (0 OR, 4 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/689 CHEMICAL ETCHING
 438/706 .Vapor phase etching (i.e., dry etching)
 438/707 ..Utilizing electromagnetic or wave energy
 438/710 ...By creating electric field (e.g., plasma,
 glow discharge, etc.)
 438/712Reactive ion beam etching (i.e., RIBE)
- 3 29/825 (2 OR, 1 XR)
 Class 029 : METAL WORKING
 29/592 METHOD OF MECHANICAL MANUFACTURE
 29/592.1 .Electrical device making
 29/825 ..Conductor or circuit manufacturing
- 3 134/1 (0 OR, 3 XR)
 Class 134 : CLEANING AND LIQUID CONTACT WITH SOLIDS
 134/1 .Including application of electrical radiant or
 wave energy to work
- 3 204/298.15 (0 OR, 3 XR)
 Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
 204/193 APPARATUS
 204/298.01 .Coating, forming or etching by sputtering
 204/298.02 ..Coating
 204/298.15 ...Specified work holder
- 3 205/123 (1 OR, 2 XR)
 Class 205 : ELECTROLYSIS: PROCESSES, COMPOSITIONS USED
 THEREIN, AND METHODS OF PREPARING THE COMPOSITIONS
 205/80 ELECTROLYTIC COATING (PROCESS, COMPOSITION AND
 METHOD OF PREPARING COMPOSITION)
 205/118 .Coating selected area
 205/122 ..Specified product produced
 205/123 ...Product is semiconductor or includes
 semiconductor
- 3 216/103 (0 OR, 3 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/83 NONGASEOUS PHASE ETCHING OF SUBSTRATE
 216/96 .Etching inorganic substrate
 216/100 ..Substrate contains elemental metal, alloy
 thereof, or metal compound
 216/102 ...Metal is elemental aluminum, an alloy, or

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216/103 compound thereof
Etchant contains acid

3 216/38 (0 OR, 3 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/38 PLANARIZING A NONPLANAR SURFACE

3 216/47 (0 OR, 3 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/41 MASKING OF A SUBSTRATE USING MATERIAL RESISTANT
 TO AN ETCHANT (I.E., ETCH RESIST)
 216/47 .Mask is multilayer resist

3 216/48 (0 OR, 3 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/41 MASKING OF A SUBSTRATE USING MATERIAL RESISTANT
 TO AN ETCHANT (I.E., ETCH RESIST)
 216/48 .Mask is exposed to nonimaging radiation

3 257/E21.175 (0 OR, 3 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
 OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
 DEVICES OR OF PARTS THEREOF (EPO)

257/E21.002 .Manufacture or treatment of semiconductor
 device (EPO)

257/E21.04 ..Device having at least one potential-jump
 barrier or surface barrier, e.g., PN junction,
 depletion layer, carrier concentration layer (EPO)

257/E21.085 ...Device having semiconductor body comprising
 Group IV elements or Group III-V compounds with or
 without impurities, e.g., doping materials (EPO)

257/E21.158Manufacture of electrode on semiconductor
 body using process other than by epitaxial growth,
 materials, or diffusion of impurities, alloying of impurity

257/E21.159Deposition of conductive or insulating
 material for electrode conducting electric current
 (EPO)

257/E21.174From a liquid, e.g., electrolytic
 deposition (EPO)

257/E21.175Using an external electrical current,
 i.e., electro-deposition (EPO)

3 257/E21.313 (0 OR, 3 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
 OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
 DEVICES OR OF PARTS THEREOF (EPO)

257/E21.002 .Manufacture or treatment of semiconductor
 device (EPO)

257/E21.04 ..Device having at least one potential-jump
 barrier or surface barrier, e.g., PN junction,
 depletion layer, carrier concentration layer (EPO)

257/E21.085 ...Device having semiconductor body comprising
 Group IV elements or Group III-V compounds with
 or without

impurities, e.g., doping materials (EPO)

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- 3 430/314 (0 OR, 3 XR)
 Class 430 : RADIATION IMAGERY CHEMISTRY: PROCESS,
 COMPOSITION, OR PRODUCT THEREOF
 430/269 IMAGING AFFECTING PHYSICAL PROPERTY OF
 RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR

OR

- PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
 430/311 .Making electrical device
 430/313 ..With formation of resist image, and etching
 of substrate or material deposition
 430/314 ...Etching of substrate and material deposition

- 3 430/329 (0 OR, 3 XR)
 Class 430 : RADIATION IMAGERY CHEMISTRY: PROCESS,
 COMPOSITION, OR PRODUCT THEREOF
 430/269 IMAGING AFFECTING PHYSICAL PROPERTY OF
 RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR OR
 PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
 430/329 .Removal of imaged layers

- 3 438/474 (1 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
 438/471 GETTERING OF SUBSTRATE
 438/473 .By implanting or irradiating
 438/474 ..Ionized radiation (e.g., corpuscular or
 plasma treatment, etc.)

- 3 438/633 (1 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
 438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
 438/597 .To form ohmic contact to semiconductive
 material
 438/618 ..Contacting multiple semiconductive regions
 (i.e., interconnects)
 438/622 ...Multiple metal levels, separated by
 insulating layer (i.e., multiple level metallization)
 438/631Having planarization step
 438/633Simultaneously by chemical and mechanical
 means

- 3 438/666 (0 OR, 3 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
 438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
 438/597 .To form ohmic contact to semiconductive
 material
 438/666 ..Specified configuration of electrode or
 contact

- 3 438/720 (0 OR, 3 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
 438/689 CHEMICAL ETCHING
 438/706 .Vapor phase etching (i.e., dry etching)
 438/707 ..Utilizing electromagnetic or wave energy
 438/710 ...By creating electric field (e.g., plasma,
 glow discharge, etc.)
 438/720Electrically conductive material (e.g.,

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metal, conductive oxide, etc.)

- 3 438/729 (2 OR, 1 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/689 CHEMICAL ETCHING
438/706 .Vapor phase etching (i.e., dry etching)
438/707 ..Utilizing electromagnetic or wave energy
438/710 ...By creating electric field (e.g., plasma,
glow discharge, etc.)
438/729Using specified electrode/susceptor
configuration (e.g., of multiple substrates using
barrel-type susceptor, planar reactor configuration,
etc.)
to generate plasma
- 3 438/798 (0 OR, 3 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/795 RADIATION OR ENERGY TREATMENT MODIFYING
PROPERTIES OF SEMICONDUCTOR REGION OF SUBSTRATE (E.G.,
THERMAL, CORPUSCULAR, ELECTROMAGNETIC, ETC.)
438/798 .Ionized irradiation (e.g., corpuscular or
plasma treatment, etc.)
- 3 451/28 (0 OR, 3 XR)
Class 451 : ABRADING
451/28 ABRADING PROCESS
- 3 451/57 (0 OR, 3 XR)
Class 451 : ABRADING
451/28 ABRADING PROCESS
451/57 .Combined abrading
- 2 29/603.15 (0 OR, 2 XR)
Class 029 : METAL WORKING
29/592 METHOD OF MECHANICAL MANUFACTURE
29/592.1 .Electrical device making
29/602.1 ..Electromagnet, transformer or inductor
29/603.01 ...Magnetic recording reproducing transducer
(e.g., tape head, core, etc.)
29/603.07Fabricating head structure or component
thereof
29/603.09Including measuring or testing
29/603.13Depositing magnetic layer or coating
29/603.15With etching or machining of magnetic
material
- 2 34/196 (0 OR, 2 XR)
Class 034 : DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS
- 34/523 APPARATUS
34/192 .Removable shelf or tray type
34/195 ..With gas or vapor circulation for contact
with treated material
34/196 ...Recirculation of treating gas or vapor
- 2 34/228 (1 OR, 1 XR)
Class 034 : DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS
- 34/523 APPARATUS
34/201 .Houses, kilns, and containers
34/218 ..With gas or vapor circulation for contact

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with treated material

34/227 ...Gas or vapor flow toward or from treated
 material entrance or exit

34/228 Countercurrent to treated material motion
 only

2 118/723E (0 OR, 2 XR)
Class 118 : COATING APPARATUS
118/715 GAS OR VAPOR DEPOSITION
118/722 .With treating means (e.g., jarring)
118/723R ..By creating electric field (e.g., gas
 activation, plasma, etc.)
118/723E ...Having glow discharge electrodes (e.g., DC,
 AC, RF, etc.)

2 118/728 (0 OR, 2 XR)
Class 118 : COATING APPARATUS
118/715 GAS OR VAPOR DEPOSITION
118/728 .Work support

2 134/104.4 (0 OR, 2 XR)
Class 134 : CLEANING AND LIQUID CONTACT WITH SOLIDS
134/104.2 .With means for collecting escaping material
134/104.4 ..Foreign material separated from liquid

2 134/137 (0 OR, 2 XR)
Class 134 : CLEANING AND LIQUID CONTACT WITH SOLIDS
134/137 .With means to movably mount or movably support
 the work or work support

2 134/61 (0 OR, 2 XR)
Class 134 : CLEANING AND LIQUID CONTACT WITH SOLIDS
134/61 .Sequential work treating receptacles or
 stations with means to transfer work or fluid-applying
 devices

2 148/DIG 135 (0 OR, 2 XR)
Class 148 : METAL TREATMENT
148/DIG 135 REMOVAL OF SUBSTRATE

2 156/345.51 (0 OR, 2 XR)
Class 156 : ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL
 MANUFACTURE
156/345.1 DIFFERENTIAL FLUID ETCHING APPARATUS
156/345.51 .With workpiece support

2 204/192.12 (0 OR, 2 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/192.1 .Coating, forming or etching by sputtering
204/192.12 ..Glow discharge sputter deposition (e.g.,
 cathode sputtering, etc.)

2 204/192.15 (1 OR, 1 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/192.1 .Coating, forming or etching by sputtering
204/192.12 ..Glow discharge sputter deposition (e.g.,
 cathode sputtering, etc.)
204/192.15 ...Specified deposition material or use

2 204/192.3 (0 OR, 2 XR)
Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
204/192.1 .Coating, forming or etching by sputtering
204/192.12 ..Glow discharge sputter deposition (e.g.,

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cathode sputtering, etc.)

204/192.15 ...Specified deposition material or use
 204/192.3With sputter etching

2 204/298.31 (0 OR, 2 XR)
 Class 204 : CHEMISTRY: ELECTRICAL AND WAVE ENERGY
 204/193 APPARATUS
 204/298.01 .Coating, forming or etching by sputtering
 204/298.31 ..Etching

2 205/118 (0 OR, 2 XR)
 Class 205 : ELECTROLYSIS: PROCESSES, COMPOSITIONS USED
 THEREIN, AND METHODS OF PREPARING THE COMPOSITIONS
 205/80 ELECTROLYTIC COATING (PROCESS, COMPOSITION AND
 METHOD OF PREPARING COMPOSITION)
 205/118 .Coating selected area

2 216/105 (0 OR, 2 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/83 NONGASEOUS PHASE ETCHING OF SUBSTRATE
 216/96 .Etching inorganic substrate
 216/100 ..Substrate contains elemental metal, alloy
 thereof, or metal compound
 216/105 ...Metal is elemental copper, an alloy, or
 compound thereof

2 216/67 (1 OR, 1 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/58 GAS PHASE ETCHING OF SUBSTRATE
 216/63 .Application of energy to the gaseous etchant
 or to the substrate being etched
 216/67 ..Using plasma

2 216/88 (0 OR, 2 XR)
 Class 216 : ETCHING A SUBSTRATE: PROCESSES
 216/83 NONGASEOUS PHASE ETCHING OF SUBSTRATE
 216/88 .Using film of etchant between a stationary
 surface and a moving surface (e.g., chemical lapping,
 etc.)

2 257/673 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/666 LEAD FRAME
 257/673 .With bumps on ends of lead fingers to connect
 to semiconductor

2 257/690 (2 OR, 0 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/688 .With large area flexible electrodes in press
 contact with opposite sides of active semiconductor chip
 and surrounded by an insulating element, e.g., ring
 257/690 .With contact or lead

2 257/692 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/688 .With large area flexible electrodes in press
 contact with opposite sides of active semiconductor
 chip
 and surrounded by an insulating element, e.g., ring
 257/690 .With contact or lead
 257/692 ..With particular lead geometry

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- 2 257/700 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/688 .With large area flexible electrodes in press
 contact with opposite sides of active semiconductor
 chip
 and surrounded by an insulating element, e.g., ring
 257/690 .With contact or lead
 257/700 ..Multiple contact layers separated from each
 other by insulator means and forming part of a package or
 housing (e.g., plural ceramic layer package)
- 2 257/723 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/688 .With large area flexible electrodes in press
 contact with opposite sides of active semiconductor chip
 and surrounded by an insulating element, e.g., ring
 257/723 .For plural devices
- 2 257/E21.001 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
 OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE DEVICES OR
 OF
 PARTS THEREOF (EPO)
- 2 257/E21.256 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
 OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
 DEVICES OR OF
 PARTS THEREOF (EPO)
 257/E21.002 .Manufacture or treatment of semiconductor
 device (EPO)
 257/E21.04 ..Device having at least one potential-jump
 depletion barrier or surface barrier, e.g., PN junction,
 layer, carrier concentration layer (EPO)
 257/E21.085 ...Device having semiconductor body comprising
 or without Group IV elements or Group III-V compounds with
 impurities, e.g., doping materials (EPO)
 257/E21.211Treatment of semiconductor body using
 material on process other than deposition of semiconductor
 material, or a substrate, diffusion or alloying of impurity
 radiation treatment (EPO)
 257/E21.214To change their surface-physical
 cutting characteristics or shape, e.g., etching, polishing,
 (EPO)
 257/E21.24To form insulating layer thereon, e.g.,
 for masking or by using photolithographic technique
 (EPO)
 257/E21.241Post-treatment (EPO)
 257/E21.249Etching insulating layer by chemical or
 physical means (EPO)
 257/E21.254Etching organic layer (EPO)
 257/E21.255By chemical means (EPO)
 257/E21.256By dry-etching (EPO)
- 2 257/E21.318 (0 OR, 2 XR)

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Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE
DEVICES OR OF

PARTS THEREOF (EPO)

257/E21.002 .Manufacture or treatment of semiconductor
device (EPO)

257/E21.04 ..Device having at least one potential-jump
barrier or surface barrier, e.g., PN junction,
depletion
layer, carrier concentration layer (EPO)

257/E21.085 ...Device having semiconductor body comprising
Group IV elements or Group III-V compounds with or
without
impurities, e.g., doping materials (EPO)

257/E21.211Treatment of semiconductor body using
process other than deposition of semiconductor material
on
a substrate, diffusion or alloying of impurity
material, or

257/E21.317To modify their internal properties, e.g.,
to produce internal imperfections (EPO)

257/E21.318Of silicon body, e.g., for gettering
(EPO)

2 257/E21.519 (0 OR, 2 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.001 PROCESSES OR APPARATUS ADAPTED FOR MANUFACTURE
OR TREATMENT OF SEMICONDUCTOR OR SOLID-STATE DEVICES
OR OF

PARTS THEREOF (EPO)

257/E21.002 .Manufacture or treatment of semiconductor
device (EPO)

257/E21.04 ..Device having at least one potential-jump
barrier or surface barrier, e.g., PN junction,
depletion
layer, carrier concentration layer (EPO)

257/E21.499 ...Assembling semiconductor devices, e.g.,
packaging, including mounting, encapsulating, or
treatment
of packaged semiconductor (EPO)

257/E21.506Attaching or detaching leads or other
conductive members; to be used for carrying current to
or
from device in operation (EPO)

257/E21.519Involving application of pressure, e.g.,
thermo-compression bonding (EPO)

2 257/E21.577 (0 OR, 2 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E21.531 ...For electrical parameters, e.g.,
resistance, deep-levels, CV, diffusions by
electrical means
(EPO)

257/E21.532 .Manufacture or treatment of devices
consisting of plurality of solid-state components
formed in
or on common substrate or of parts thereof;
manufacture of
integrated circuit devices or of parts thereof (EPO)

257/E21.536 ..Manufacture of specific parts of devices
(EPO)

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- 257/E21.575 ...Interconnections, comprising conductors and dielectrics, for carrying current between separate components within device (EPO)
- 257/E21.576Characterized by formation and post treatment of dielectrics, e.g., planarizing (EPO)
- 257/E21.577By forming via holes (EPO)

2 257/E21.58 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

257/E21.531 ...For electrical parameters, e.g., resistance, deep-levels, CV, diffusions by

electrical means

(EPO)
257/E21.532 .Manufacture or treatment of devices consisting of plurality of solid-state components or on common substrate or of parts thereof;

formed in

manufacture of

integrated circuit devices or of parts thereof (EPO)
257/E21.536 ..Manufacture of specific parts of devices (EPO)

257/E21.575 ...Interconnections, comprising conductors and dielectrics, for carrying current between separate components within device (EPO)

257/E21.576Characterized by formation and post treatment of dielectrics, e.g., planarizing (EPO)

257/E21.58Planarizing dielectric (EPO)

2 257/E21.587 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

257/E21.531 ...For electrical parameters, e.g., resistance, deep-levels, CV, diffusions by

electrical means

(EPO)
257/E21.532 .Manufacture or treatment of devices consisting of plurality of solid-state components or on common substrate or of parts thereof;

formed in

manufacture of

integrated circuit devices or of parts thereof (EPO)

257/E21.536 ..Manufacture of specific parts of devices (EPO)

257/E21.575 ...Interconnections, comprising conductors and dielectrics, for carrying current between separate components within device (EPO)

257/E21.576Characterized by formation and post treatment of dielectrics, e.g., planarizing (EPO)

257/E21.585Filling of holes, grooves, vias or trenches with conductive material (EPO)

257/E21.587By deposition over sacrificial masking layer, e.g., lift-off (EPO)

2 257/E21.589 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

257/E21.531 ...For electrical parameters, e.g., resistance, deep-levels, CV, diffusions by

electrical means

(EPO)
257/E21.532 .Manufacture or treatment of devices consisting of plurality of solid-state components or on common substrate or of parts thereof;

formed in

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manufacture of

- 257/E21.536 ..Manufacture of specific parts of devices (EPO)
- 257/E21.575 ...Interconnections, comprising conductors and dielectrics, for carrying current between separate components within device (EPO)
- 257/E21.576Characterized by formation and post treatment of dielectrics, e.g., planarizing (EPO)
- 257/E21.589By forming conductive members before deposition of protective insulating material, e.g., pillars, studs (EPO)

2 257/E21.591 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

- 257/E21.531 ...For electrical parameters, e.g., resistance, deep-levels, CV, diffusions by

electrical means

- 257/E21.532 ..Manufacture or treatment of devices consisting of plurality of solid-state components

formed in

or on common substrate or of parts thereof;

manufacture of

- 257/E21.536 ..Manufacture of specific parts of devices (EPO)
- 257/E21.575 ...Interconnections, comprising conductors and dielectrics, for carrying current between separate components within device (EPO)
- 257/E21.576Characterized by formation and post treatment of dielectrics, e.g., planarizing (EPO)
- 257/E21.591Modifying pattern or conductivity of conductive members, e.g., formation of alloys, reduction

of

contact resistances (EPO)

2 257/E23.019 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

- 257/E23.001 PACKAGING, INTERCONNECTS, AND MARKINGS FOR SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES (EPO)
- 257/E23.01 ..Arrangements for conducting electric current to or from solid-state body in operation, e.g., leads, terminal arrangements (EPO)
- 257/E23.012 ..Consisting of lead-in layers inseparably applied to semiconductor body (EPO)
- 257/E23.019 ...Consisting of layered constructions comprising conductive layers and insulating layers, e.g., planar contacts (EPO)

2 257/E23.055 (0 OR, 2 XR)

Class 257 : ACTIVE SOLID-STATE DEVICES

- 257/E23.001 PACKAGING, INTERCONNECTS, AND MARKINGS FOR SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES (EPO)
- 257/E23.01 ..Arrangements for conducting electric current to or from solid-state body in operation, e.g., leads, terminal arrangements (EPO)
- 257/E23.023 ..Consisting of soldered or bonded constructions (EPO)
- 257/E23.031 ...Lead frames or other flat leads (EPO)
- 257/E23.055Consisting of thin flexible metallic tape with or without film carrier (EPO)

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- 2 257/E23.065 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E23.001 PACKAGING, INTERCONNECTS, AND MARKINGS FOR SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES (EPO)
 257/E23.01 .Arrangements for conducting electric current to or from solid-state body in operation, e.g., leads, terminal arrangements (EPO)
 257/E23.023 ..Consisting of soldered or bonded constructions (EPO)
 257/E23.06 ...Leads, i.e., metallizations or lead frames on insulating substrates, e.g., chip carriers (EPO)
 257/E23.065Flexible insulating substrates (EPO)
- 2 257/E23.068 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E23.001 PACKAGING, INTERCONNECTS, AND MARKINGS FOR SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES (EPO)
 257/E23.01 .Arrangements for conducting electric current to or from solid-state body in operation, e.g., leads, terminal arrangements (EPO)
 257/E23.023 ..Consisting of soldered or bonded constructions (EPO)
 257/E23.06 ...Leads, i.e., metallizations or lead frames on insulating substrates, e.g., chip carriers (EPO)
 257/E23.068Additional leads joined to metallizations on insulating substrate, e.g., pins, bumps, wires, flat leads (EPO)
- 2 257/E23.078 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E23.001 PACKAGING, INTERCONNECTS, AND MARKINGS FOR SEMICONDUCTOR OR OTHER SOLID-STATE DEVICES (EPO)
 257/E23.01 .Arrangements for conducting electric current to or from solid-state body in operation, e.g., leads, terminal arrangements (EPO)
 257/E23.078 ..Flexible arrangements, e.g., pressure contacts without soldering (EPO)
- 2 257/E23.144 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E23.139 ...Liquid at normal operating temperature of device (EPO)
 257/E23.141 .Arrangements for conducting electric current within device in operation from one component to another,
 interconnections, e.g., wires, lead frames (EPO)
 257/E23.142 ..Including external interconnections consisting of multilayer structure of conductive and insulating layers inseparably formed on semiconductor body
 (EPO)
 257/E23.144 ...Capacitive arrangements or effects of, or between wiring layers (EPO)
- 2 257/E23.167 (0 OR, 2 XR)
 Class 257 : ACTIVE SOLID-STATE DEVICES
 257/E23.139 ...Liquid at normal operating temperature of device (EPO)
 257/E23.141 .Arrangements for conducting electric current within device in operation from one component to another,
 interconnections, e.g., wires, lead frames (EPO)
 257/E23.142 ..Including external interconnections

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consisting of multilayer structure of conductive and
insulating layers inseparably formed on semiconductor

body

- (EPO)
257/E23.154 ...Characterized by materials (EPO)
257/E23.167Insulating materials (EPO)
- 2 257/E31.112 (0 OR, 2 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E31.046Including microcrystalline Group IV
compound (e.g., c-SiGe, c-SiC) (EPO)
257/E31.11 .Detail of nonsemiconductor component of
radiation-sensitive semiconductor device (EPO)
257/E31.111 ..Input/output circuit of device (EPO)
257/E31.112 ...For device having potential or surface
barrier (EPO)
- 2 257/E31.131 (0 OR, 2 XR)
Class 257 : ACTIVE SOLID-STATE DEVICES
257/E31.046Including microcrystalline Group IV
compound (e.g., c-SiGe, c-SiC) (EPO)
257/E31.11 .Detail of nonsemiconductor component of
radiation-sensitive semiconductor device (EPO)
257/E31.131 ..Arrangement for temperature regulation (e.g.,
cooling, heating, or ventilating) (EPO)
- 2 324/715 (0 OR, 2 XR)
Class 324 : ELECTRICITY: MEASURING AND TESTING
324/600 IMPEDANCE, ADMITTANCE OR OTHER QUANTITIES
REPRESENTATIVE OF ELECTRICAL STIMULUS/RESPONSE
RELATIONSHIPS
324/649 .Lumped type parameters
324/691 ..Using resistance or conductance measurement
324/713 ...With voltage or current signal evaluation
324/715Including a particular probing technique
(e.g., four point probe)
- 2 335/78 (1 OR, 1 XR)
Class 335 : ELECTRICITY: MAGNETICALLY OPERATED SWITCHES,
MAGNETS, AND ELECTROMAGNETS
335/2 ELECTROMAGNETICALLY ACTUATED SWITCHES
335/78 .Polarity-responsive
- 2 427/124 (1 OR, 1 XR)
Class 427 : COATING PROCESSES
427/58 ELECTRICAL PRODUCT PRODUCED
427/123 .Metal coating
427/124 ..Vapor deposition or utilizing vacuum
- 2 427/248.1 (1 OR, 1 XR)
Class 427 : COATING PROCESSES
427/248.1 COATING BY VAPOR, GAS, OR SMOKE
- 2 427/250 (0 OR, 2 XR)
Class 427 : COATING PROCESSES
427/248.1 COATING BY VAPOR, GAS, OR SMOKE
427/250 .Metal coating
- 2 427/96.8 (0 OR, 2 XR)
Class 427 : COATING PROCESSES
427/58 ELECTRICAL PRODUCT PRODUCED
427/96.1 .Integrated circuit, printed circuit, or

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circuit board

427/96.8 ..Vapor or gas deposition

2 427/98.5 (0 OR, 2 XR)

Class 427 : COATING PROCESSES

427/58 ELECTRICAL PRODUCT PRODUCED

427/96.1 .Integrated circuit, printed circuit, or
circuit board

427/98.4 ..Nonuniform or patterned coating

427/98.5 ...With pretreatment of substrate

2 428/142 (1 OR, 1 XR)

Class 428 : STOCK MATERIAL OR MISCELLANEOUS ARTICLES

428/98 STRUCTURALLY DEFINED WEB OR SHEET (E.G.,
OVERALL DIMENSION, ETC.)428/141 .Continuous and nonuniform or irregular surface
on layer or component (e.g., roofing, etc.)

428/142 ..With transparent or protective coating

2 428/209 (2 OR, 0 XR)

Class 428 : STOCK MATERIAL OR MISCELLANEOUS ARTICLES

428/98 STRUCTURALLY DEFINED WEB OR SHEET (E.G.,
OVERALL DIMENSION, ETC.)428/195.1 .Discontinuous or differential coating,
impregnation or bond (e.g., artwork, printing, retouched
photograph, etc.)

428/209 ..Including metal layer

2 428/323 (0 OR, 2 XR)

Class 428 : STOCK MATERIAL OR MISCELLANEOUS ARTICLES

428/221 WEB OR SHEET CONTAINING STRUCTURALLY DEFINED
ELEMENT OR COMPONENT428/323 .Including a second component containing
structurally defined particles

2 428/411.1 (0 OR, 2 XR)

Class 428 : STOCK MATERIAL OR MISCELLANEOUS ARTICLES

428/411.1 COMPOSITE (NONSTRUCTURAL LAMINATE)

2 430/315 (1 OR, 1 XR)

Class 430 : RADIATION IMAGERY CHEMISTRY: PROCESS,
COMPOSITION, OR PRODUCT THEREOF

430/269 IMAGING AFFECTING PHYSICAL PROPERTY OF

RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR

OR

PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT

430/311 .Making electrical device

430/313 ..With formation of resist image, and etching
of substrate or material deposition

430/315 ...Material deposition only

2 430/318 (0 OR, 2 XR)

Class 430 : RADIATION IMAGERY CHEMISTRY: PROCESS,
COMPOSITION, OR PRODUCT THEREOF

430/269 IMAGING AFFECTING PHYSICAL PROPERTY OF

RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR

OR

PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT

430/311 .Making electrical device

430/313 ..With formation of resist image, and etching
of substrate or material deposition

430/318 ...Metal etched

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- 2 438/107 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/106 PACKAGING (E.G., WITH MOUNTING, ENCAPSULATING,
 ETC.) OR TREATMENT OF PACKAGED SEMICONDUCTOR
- 438/107 .Assembly of plural semiconductive substrates
 each possessing electrical device
- 2 438/109 (2 OR, 0 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/106 PACKAGING (E.G., WITH MOUNTING, ENCAPSULATING,
 ETC.) OR TREATMENT OF PACKAGED SEMICONDUCTOR
- 438/107 .Assembly of plural semiconductive substrates
 each possessing electrical device
- 438/109 ..stacked array (e.g., rectifier, etc.)
- 2 438/462 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/460 SEMICONDUCTOR SUBSTRATE DICING
- 438/462 .Having specified scribe region structure
 (e.g., alignment mark, plural grooves, etc.)
- 2 438/476 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/471 GETTERING OF SUBSTRATE
- 438/476 .By layers which are coated, contacted, or
 diffused
- 2 438/612 (2 OR, 0 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
- 438/597 .To form ohmic contact to semiconductive
 material
- 438/612 ..Forming solder contact or bonding pad
- 2 438/631 (1 OR, 1 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
- 438/597 .To form ohmic contact to semiconductive
 material
- 438/618 ..Contacting multiple semiconductive regions
 (i.e., interconnects)
- 438/622 ...Multiple metal levels, separated by
 insulating layer (i.e., multiple level metallization)
- 438/631Having planarization step
- 2 438/640 (2 OR, 0 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
- 438/597 .To form ohmic contact to semiconductive
 material
- 438/618 ..Contacting multiple semiconductive regions
 (i.e., interconnects)
- 438/622 ...Multiple metal levels, separated by

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438/637 insulating layer (i.e., multiple level metallization)
 With formation of opening (i.e., viahole)
 in insulative layer
 438/640 Having viahole of tapered shape

2 438/672 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
 438/597 .To form ohmic contact to semiconductive
 material
 438/669 ..And patterning of conductive layer
 438/672 ...Plug formation (i.e., in viahole)

2 438/678 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
 438/597 .To form ohmic contact to semiconductive
 material
 438/678 ..Electroless deposition of conductive layer

2 438/688 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/584 COATING WITH ELECTRICALLY OR THERMALLY
 CONDUCTIVE MATERIAL
 438/597 .To form ohmic contact to semiconductive
 material
 438/688 ..Aluminum or aluminum alloy conductor

2 438/693 (2 OR, 0 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/689 CHEMICAL ETCHING
 438/690 .Combined with the removal of material by
 nonchemical means (e.g., ablating, abrading, etc.)
 438/691 ..Combined mechanical and chemical material
 removal
 438/692 ...Simultaneous (e.g., chemical-mechanical
 polishing, etc.)
 438/693 Utilizing particulate abradant

2 438/725 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/689 CHEMICAL ETCHING
 438/706 .Vapor phase etching (i.e., dry etching)
 438/707 ..Utilizing electromagnetic or wave energy
 438/710 ...By creating electric field (e.g., plasma,
 glow discharge, etc.)
 438/725 Organic material (e.g., resist, etc.)

2 438/734 (0 OR, 2 XR)
 Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

438/689 CHEMICAL ETCHING
 438/706 .Vapor phase etching (i.e., dry etching)
 438/734 ..Sequential etching steps on a single layer

2 438/759 (0 OR, 2 XR)

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- Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/758 COATING OF SUBSTRATE CONTAINING SEMICONDUCTOR
REGION OR OF SEMICONDUCTOR SUBSTRATE
- 438/759 .Combined with the removal of material by
nonchemical means
- 2 438/945 (0 OR, 2 XR)
Class 438 : SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
- 438/942 MASKING
- 438/945 .Special (e.g., metal, etc.)
- 2 451/36 (0 OR, 2 XR)
Class 451 : ABRADING
- 451/28 ABRADING PROCESS
- 451/36 .Utilizing fluent abradant
- 2 451/56 (1 OR, 1 XR)
Class 451 : ABRADING
- 451/28 ABRADING PROCESS
- 451/56 .With tool treating or forming